

Retrofit & Wireless Products

The advantages of using wireless interfaces throughout your power monitoring system are numerous and proven. Whether you install these products as part of a retrofit upgrade or as modules in a new build environment, ease of installation and commissioning will reap huge economic benefits.

Retrofit & Wireless Products

The PowerLogic wireless range is designed to retrofit existing switchboards and enhance the energy efficiency of buildings for many years.

These products are:

- Easy and cost-effective to install
- Able to collect a broad scope of electrical data
- Able to utilize a variety of meters to measure WAGES (Water, Air, Gas, Electricity, Steam) usage
- Transmit all data to a centralized data concentrator for detailed analysis



METSEEM3502



METSEEM4235

PB106431

PB116451

EM3500 series

The EM3500 Series DIN Rail Meter combines exceptional performance and easy installation to deliver a cost-effective solution for power monitoring applications.

The EM35xx can be installed on standard DIN rail or surface mounted as needed. Pulse output and phase alarms provide additional versatility.

Applications

Capable of essential cost management:

- Energy monitoring in building automation systems
- Renewable energy monitoring
- Commercial sub-metering
- Energy management
- Industrial monitoring
- Accurate cost allocation



METSEEM3502

PB1105431

The solution for

Markets that can benefit from a solution that includes PowerLogic EM3500 series meters:

- Buildings
- Industry
- Healthcare
- Data Centre and networks
- Infrastructure

Benefits

System integrators' benefit

- Ease of integration
- Ease of setup
- Cost effectiveness

Panel builders' benefit

- Ease of installation
- Cost effectiveness
- Aesthetically pleasing
- Simplified ordering

End users' benefit

- Ease of use
- Precision metering & sub-billing
- Billing flexibility
- Comprehensive, consistent and superior performance

Competitive advantages

- DIN rail mounting option; easy installation
- Real energy output and phase loss alarm output
- 90-600 V AC; application versatility with fewer models to stock
- Bright backlit LCD; easy visibility in dark enclosures
- Data logging capability safeguard during power failures
- EM35xx models compatible with LVCTs from 5 A to 32000 A
- User-enabled password protection prevents tampering
- Native BACnet MS/TP support (no gateway)

Power management solutions

Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximise electrical network reliability and availability, and optimise electrical asset performance.

Conformity of standards

- IEC 61557-12
- IEC 61000-4-4
- IEC 62053-22
- IEC 61000-4-5
- IEC 62053-24
- IEC 61000-4-6
- IEC 61010-1
- IEC 61000-4-8
- IEC 61000-4-2
- Etc.
- IEC 61000-4-3

EM3500 series

PB105431



PowerLogic™ EM3500

The data logging capability (EM3555 and EM3560) protects data in the event of a power failure. Modbus, pulse output, and phase alarms are all provided to suit a wide variety of applications. Additional pulse inputs on EM3560 provide an easy way to incorporate simple flow sensors to track gas, water, steam, or other energy forms using a BACnet system in addition to full monitoring of electrical energy.

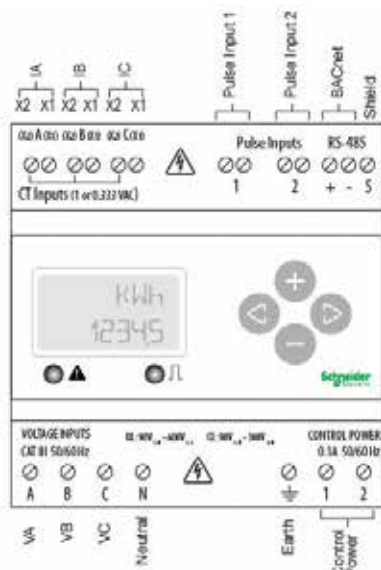
EM35xxA (Pulse, Modbus, BACnet) models designed for use exclusively with Rogowski coil CTs where integrator and power supply for the CTs are built into the meter, resulting in fewer devices to purchase and faster to install. (Not recommended for high harmonic applications.)

The EM3555 models adds a bi-directional monitoring feature designed expressly for renewable energy applications, allowing measurement of power imported from the utility grid as well as power exported from the renewable energy source (e.g. solar panels). In this way, a facility administrator track all energy data, ensuring accuracy in billing and crediting.

• Features

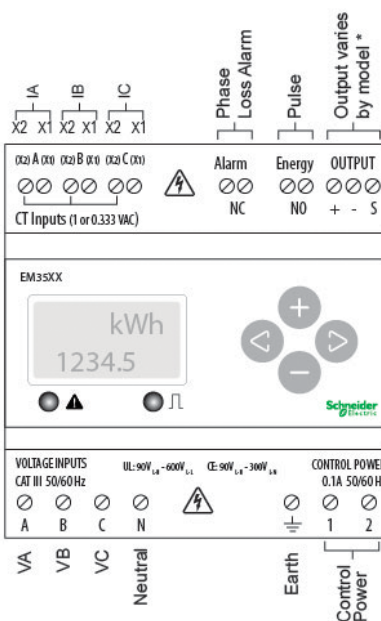
- All Models: A compact solution for panelboard monitoring
 - DIN rail mounting option; easy installation
 - ANSI 12.20 0.2% accuracy, IEC 62053-22 Class 0.2S for all 35xx models; great for cost allocation
 - ANSI C12.20 0.5% accuracy, IEC 62053-22 Class 0.2S for EM35xxA models
 - Real energy output and phase loss alarm output on EM3502(A), EM3550(A), and EM3555 models; one device serves multiple applications
 - 90-600 VAC; application versatility with fewer models to stock
 - Bright backlit LCD; easy visibility in dark enclosures
 - Data logging capability EM3555 & EM3560(A); safeguard during power failures
 - EM35xx models compatible with LVCTs from 5 A to 32000 A; wide range of service types
 - User-enabled password protection; prevents tampering
 - EM35xxA models are designed to work exclusively with Rogowski coil CTs 20-5000 A range. Eliminate site walks, save time and money. (Not recommended in high harmonic applications.)
 - System integration via Modbus EM355xx(A) or BACnet MS/TP EM356xx(A); convenient compatibility with existing systems
 - Native BACnet MS/TP support (no gateway) with serial rates up to 115.2 kbaud EM3560, EM3561, EM3560A, & EM3561A
- EM3555 Models: An essential solution for Solar and other renewable energy applications
 - Bi-directional metering (4-quadrant); allows net metering
 - Data logging capability; ensures long term data retrieval
 - CSI approved

PB113727



EM3500 parts and connection terminals

PB113728



EM3502/EM355x parts and connection terminals

EM3500 series

PE105437



EM3500 in enclosure with door open

Selection guide

Electrical characteristics		
Inputs	Control Power, AC	50/60 Hz; 5 VA max.; 90 V min.; UL Maximums: 600 V L-L (347V L-N); CE Maximums: 300 V L-N (520V L-L)
	Control Power, DC	3W max.; UL and CE: 125 to 300 V DC (external DC current limiting required)
	Voltage Input	UL: 90 V L-N to 600 V L-L ; CE: 90 V L-N to 300 V L
Current Input	Scaling	5 A to 32,000 A Non "A" models only 20 A to 5000 A for "A" models only
	Input Range	1/3V and 1V nominal LVCT (selectable) Non "A" models only Rogowski coil CTs only for "A" models
	Pulse Inputs (EM3560 & EM3560A)	Two sets of contact inputs to pulse accumulators
Accuracy	Real Power and Energy	0.2 % (ANSI C12.20, IEC 62053-22 Class 0.2S) EM35xx models only 0.5 % (ANSI C12.20, IEC 62053-22 Class 0.5S) EM35xxA models only
Outputs	All Models (EM3560, EM3560A, EM3561 & EM3561A)	Real Energy Pulse: N.O. static; Alarm contacts: N.C. static
	EM3502	Reactive energy pulse 30 VAC/DC
	EM3550, EM3555, EM3550A	RS-485 2-wire Modbus RTU (1200 baud to 38.4 kbaud)
	EM3560, EM3560A, EM3561, EM3561A	RS-485 2-wire BACnet MS/TP (9600 baud to 115.2 kbaud)
Mechanical characteristics		
Mounting	DIN Rail or 3-point screw mount	
Environmental conditions		
Operating temperature Range	-30 °C to 70 °C	
Storage Temperature Range	-40 °C to 85°C	
Humidity Range	<95 % RH non-condensing	
Accessories		
NEMA 4x enclosure (EM3500-ENC, pictured)		
Split-core low voltage CTs (LVCTxx)		
Fuse kits (EFP1, EFP2, EFP3)		
Safety		
US and Canada (cULus) UL508 (open type device)/CSA 22.2 No. 14-05		
Europe (CE) EN61010-1:2001		

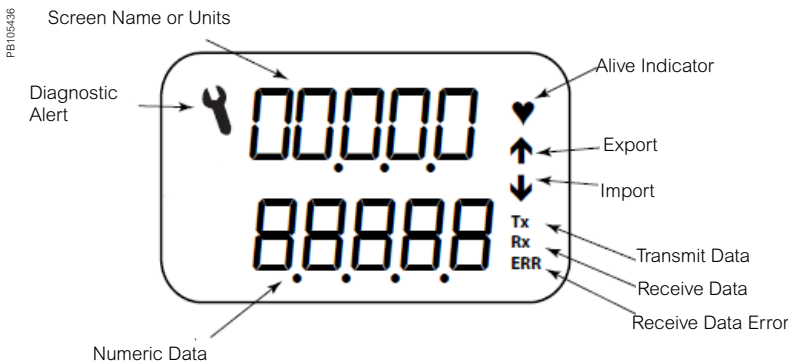
Feature selection

Commercial reference number	Model	Description
METSEEM3502	EM3502	Pulse out only
METSEEM3550	EM3550	Modbus - 2 quadrant
METSEEM3555	EM3555	Modbus - 4 quadrant with logging
METSEEM3560	EM3560	BACnet with logging
METSEEM3502A	EM3502A	Pulse Rope CT model
METSEEM3550A	EM3550A	Modbus Rope CT Model
METSEEM3560A	EM3560A	BACnet w/ logging Rope CT Model
METSEEM3561	EM3561	BACnet without logging
METSEEM3561A	EM3561A	BACnet without logging Rope CT Model

EM3500 series

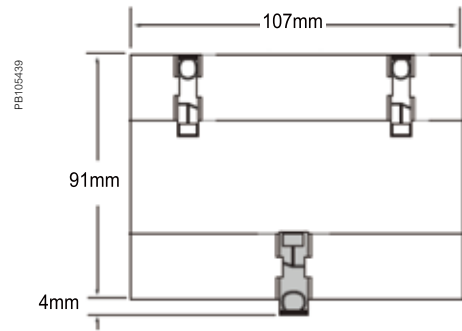
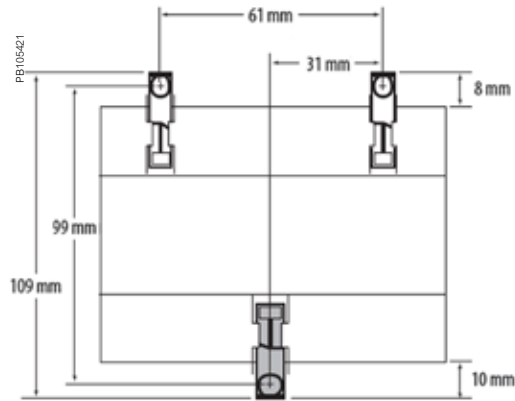
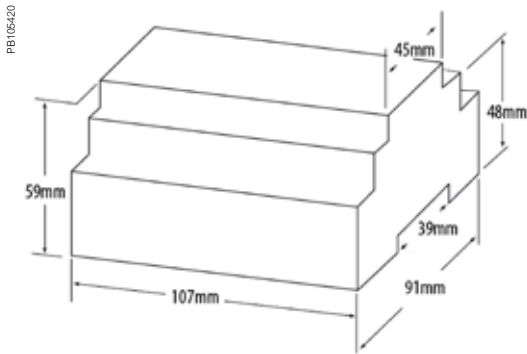
EM3500 series	EM3502	EM3550	EM3560	EM3561	EM3555	EM3502A	EM3550A	EM3560A	EM3561A
Measurement Capability, Full Data Set									
Bi-directional Energy Measurements					■				
Power (3-phase total and per phase): Real (kW) Reactive (kVAR), and Apparent (kVA)	■	■	■	■	■	■	■	■	■
Power Factor: 3-phase average & per phase	■	■	■	■	■	■	■	■	■
Present Power Demand: Real (kW), Reactive (kVAR), and Apparent (kVA)	■	■	■	■	■	■	■	■	■
Import and Export totals of Present Power Demand: Real (kW), Reactive (kVAR), & Apparent (kVA)					■				
Peak Power Demand: Real (kW), Reactive (kVAR), and Apparent (kVA)	■	■	■	■	■	■	■	■	■
Current (3-phase average and per phase)	■	■	■	■	■	■	■	■	■
Voltage: Line-Line and Line-Neutral (3-phase average and per phase)	■	■	■	■	■	■	■	■	■
Frequency	■	■	■	■	■	■	■	■	■
ANSI C12.20 0.5 % accuracy, IEC 62053-22 Class 0.5S						■	■	■	■
ANSI C12.20 0.2 % accuracy, IEC 62053-22 Class 0.2S	■	■	■	■	■				
Accumulated Net Energy: Real (kWh), Reactive (kVARh), and Apparent (kVAh)	■	■	■	■	■	■	■	■	■
Accumulated Real Energy by phase (kWh)	■	■	■	■	■	■	■	■	■
Import and Export Accumulators of Real and Apparent Energy					■				
Reactive Energy Accumulators by Quadrant (3-phase total & per phase)					■				
Demand Interval Configuration: Fixed or Rolling Block	■	■	■	■	■	■	■	■	■
Demand Interval Configuration: External Sync to Comms		■	■	■	■		■	■	■
Data Logging (Store up to 60 days at 15-minute interval)									
Data Logging: 10 16-Bit Configurable (can include Date/Time) Data Buffers					■				
Data Logging: 3 Timestamped 32-Bit Configurable Data Buffers			■					■	
Outputs									
Alarm Output (N.C.)	■	■	■		■	■	■	■	
1 Pulse Output (N.O.)		■			■		■		
2 Pulse Outputs (N.O.)	■					■			
RS-485 Serial (Modbus RTU Protocol)		■			■		■		
RS-485 Serial (BACnet MS/TP Protocol)			■	■				■	■
LON FT Serial (LonTalk Protocol)									
Inputs									
2 Pulse Contact Accumulator Inputs				■					■
1 Pulse Contact Accumulator Input			■					■	

Display Screen Diagram



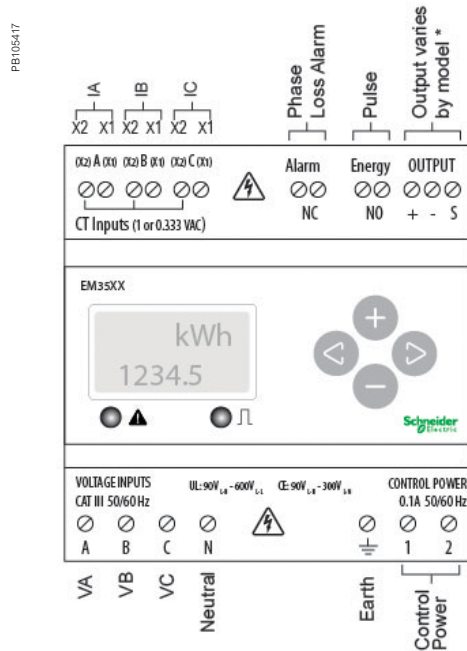
EM3500 series

EM3500 dimensions



Bottom View (DIN Mount Option)

EM3500 connections



Two 5-character rows of display text.
Top row alphanumeric;
Bottom row numeric only

The red Alarm LED lights when any of the 3 phase voltages drop below the selected threshold.

The green Energy LED lights momentarily each time the Energy output pulse is active.

Please see EM3500 User Guide and EM3500 Installation Guide for safe and correct wiring and connection information.

EM4200 series

The PowerLogic EM4200 Series Enercept power and energy meters provide a unique solution for measuring energy data.

Designed for simplicity, the range includes two main offers: System Calibrated and Flex. The EM4200 System Calibrated offers system accuracy, pre-mounted Current Transducers, with a simple to quote and order single part number.

The EM4200 Flex offers the flexibility of a wide range of Current Transducers to match most applications, no matter how varied.

Applications

Capable of essential cost management:

- Energy monitoring in building automation systems
- Renewable energy monitoring
- Energy management
- Commercial sub-metering
- Industrial monitoring
- Accurate cost allocation



METSEEM4235

PP121803

The solution for

Markets that can benefit from a solution that includes PowerLogic EM4200 series:

- Buildings
- Industry
- Healthcare
- Data centre and networks
- Infrastructure

Benefits

System integrators' benefit

- Ease of integration
- Ease of setup
- Cost effectiveness

Panel builders' benefit

- Ease of installation
- Cost effectiveness
- Aesthetically pleasing
- Simplified ordering

End users' benefit

- Ease of use
- Precision metering & sub-billing
- Billing flexibility
- Comprehensive, consistent and superior performance

Competitive advantages

- High reliability with high system, or meter accuracy.
- Single part to order a metering chain (System Calibrated).
- Supports a large range of Sensor options. Flex can adapt to CTs from 50 to 5000 A, or different Rogowski coil sizes rated for up to 5000 A.
- Modbus and BACnet protocols along with uni-directional and bi-directional feature sets.
- Wide 90 to 480 V AC input range.
- DIN rail or screw-mount options, including mounting bracket for easy installation.
- Seamless integration with EcoStruxure™ Power Management software products.

Power management solutions

Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximise electrical network reliability and availability, and optimise electrical asset performance.

Conformity of standards

- CAN/CSA-C22.2
- EN 61326-1
- EN 61000-6-2
- Class A
- EN 61000-6-4
- FCC 47 CFR
- Class A
- Part 15 Class A
- EN 61010-1
- UL 61010-1

Accuracy standards

Flex models

- ANSI C12.20-2015 Class 0.2
- IEC 62053-24 Class 1S

When used with 1/3 V CT (Meter accuracy)

- IEC 62053-22 Class 0.2S 0.2%

When used with Rogowski Coils (Meter accuracy)

- IEC 62053-22 Class 0.5S

System calibrated

- ANSI C12.1, 1%
- IEC 62053-22 Class 1S 1%

EM4200 series



EM4200 Flex Power Meter



EM4200 System Calibrated with calibrated Rogowski coils

The EM4200 meter series provides a highly flexible retrofit option ideal when adding metering to an existing building, or to integrate in an OEM solution. Designed to simplify the ordering process, the meter is declined in 2 major options:

System Calibrated offers the simplest way to order, deploy and meet requirements. The meter comes with pre-mounted Current Transducers (CT), or Rogowski Coils. A single reference provides a System calibrated accuracy meter with a 100, 200, 400A CT, or 5,000A Rogowski coil.

Flex offers the flexibility required when the CT, or Rogowski coil, rating or size needs to further adapt to the site. CTs can range from 50 to 5,000A and Rogowski coils can be different sizes with a 5,000 A rating.

- General features

- Uni and Bi-Directional metering to support to power generation application.
- Data logging.
- Modbus and BACnet serial communication with auto-protocol and baud rate detection.
- Configurable with or without power.
- DIN rail or screw-mount options, including mounting brackets for easy installation.
- Seamless integration in Power Monitoring Operations and Power SCADA Operations.
- Wide input range of 90 to 480 V AC.
- Approvals: UL 61010-1, IEC/EN 61010-1

- System calibrated features

- Three factory mounted and calibrated Current Transducers (100, 200 or 400 A), or Rogowski coils (5,000 A, 12" or 18" (304.8 mm or 457.2 mm)). Simplifies ordering and commissioning.
- ANSI version only: Fuse packs factory mounted.
- System Accuracy from 1% to 100% load:
 - Real Power and Energy: ANSI C12.1 1%, IEC 62053-22 Class 1S, 1%.
 - Reactive Power and Energy: IEC 62053-24 Class 1, 1%

- Flex features

- Supports generic 1/3 V CTs from 50 to 5,000 A. Or 1/3 V 5,000 A Rogowski coils.
- ANSI: Optional fuse packs available.
- Meter Accuracy from 1% to 100% of load (CT mode):
 - Real Power and Energy: ANSI C12.20 0.2%, IEC 62053-22 Class 0.2S, 0.2%.
 - Reactive Power and Energy: IEC 62053-24 Class 1, 1%.

EM4200 series

EM4200 series selection guide

Advantage	EM4200 Flex		EM4200 System Calibrated			
	METSEEM4235	METSEEM4236	METSEEM4235Axx	METSEEM4236Axx	METSEEM4235Bxx	METSEEM4236Bxx
General						
Market	IEC	ANSI	IEC	ANSI	IEC	ANSI
Single part to order			Yes	Yes	Yes	Yes
Factory mounted CTs/Rogowski coil			Yes	Yes	Yes	Yes
CT						
Rating	50 to 5000 A user choice	50 to 5000 A user choice	Three		Three 100, 200 or 400 A supplied	Three 100, 200 or 400 A supplied
Type	1/3 V Solid or Split Core	1/3 V Solid or Split Core			Split Core	Split Core
Rogowski Coil						
Rating	5000 A	5000 A	5000 A supplied	Three 5000 A supplied		
Type						
Size	User choice	User choice	12" or 18"	12" or 18"		
Accuracy						
Meter	0.2% with CTs 0.5% with Rogowski Coil	0.2% with CTs 0.5% with Rogowski Coil				
System			1%	1%	1%	1%
Fuse pack						
	Option sold separately	Option sold separately		Factory mounted		Factory mounted
Communication						

EM4200 parts descriptions and advantages

EM4200 Flex meter

EM4200 System calibrated

PE120811



PE120812



EM4200 series

Electrical characteristics		EM4200 Flex	EM4200 System calibrated
Input-voltage characteristics	Inputs	V1, V2, V3, Vn	V1, V2, V3, Vn
	Measured voltage	90 - 277 V AC L-N UL max 480 V L-L CE max 300 V L-N	90 - 277 V AC L-N UL max 480 V L-L CE max 300 V L-N
	Frequency range	50/60 Hz	50/60 Hz
Mechanical characteristics			
Weight		Approx 1/0 kg (2.2 lb)	1.4 to 2.2 Kg (3.10 to 4.85 lb) (model dependent)
Dimensions		46.63 x 35.81 x 152.36 mm (1.84 x 1.41 x 6.0 in)	46.63 x 35.81 x 152.36 mm (1.84 x 1.41 x 6.0 in) (Meter alone), CT/Rogowski size varies with model
Environmental conditions			
Operating temperature		-30 °C to 70 °C (-22 to 158 °F)	0 to 70 °C (32 to 158 °F)
Storage temperature		-40 °C to 85 °C (-40 to 185 °F)	With Split Core CTs: -40 to 85 °C (-40 to 185 °F) With Rogowski Coils: -40 to 70 °C (-40 to 158 °F)
Humidity rating		<95 % RH non-condensing	<95 % RH non-condensing
Enclosure		Indoor use only - not suitable for wet locations	Indoor use only - not suitable for wet locations
Altitude		3000 m (10,000 ft)	3000 m (10,000 ft)
Pollution degree		2	2
Electromagnetic compatibility			
Compliance			
		CAN/CSA-C22.2 EN 61000-6-2 EN 61000-6-4 Class A EN 61010-1 EN 61326-1 Class A FCC 47 CFR Part 15 Class A UL 61010-1	CAN/CSA-C22.2 EN 61000-6-2 EN 61000-6-4 Class A EN 61010-1 EN 61326-1 Class A FCC 47 CFR Part 15 Class A UL 61010-1
Accuracy			
		ANSI C12.20-2015 Class 0.2	ANSI C12.20-2015 Class 0.2
		IEC 62053-24 Class 1S	IEC 62053-24 Class 1S
		ANSI C12.20 2015 Class 0.2 IEC 62053-24 Class 1S When used with 1/3 V CT (Meter accuracy) IEC 62053-22 Class 0.2S 0.2% When used with Rogowski coils (Meter accuracy) IEC 62053-22 Class 0.5S	ANSI C12.1 1% IEC 62053-21 Class 1S 1% IEC 62053-24 Class 1 1%

Commercial Reference Numbers

Market	Commercial Reference	Rating	CTR type	CT size	Fuse pack	CT lead length	System calibrated
IEC	METSEEM4235	User choice					
IEC	METSEEM4235A12	Up to 5000 A (3 coils supplied)	Rogowski	12" (304.8 mm)		6 ft (1828.8 mm)	Yes
IEC	METSEEM4235A18	Up to 5000 A (3 coils supplied)	Rogowski	18" (457.2 mm)		6 ft (1828.8 mm)	Yes
IEC	METSEEM4235B101	100 A (3 CTs supplied)	Split core			6 ft (1828.8 mm)	Yes
IEC	METSEEM4235B201	200 A (3 CTs supplied)	Split core			6 ft (1828.8 mm)	Yes
IEC	METSEEM4235B401	400 A (3 CTs supplied)	Split core			6 ft (1828.8 mm)	Yes
ANSI	METSEEM4236	User choice			Option		
ANSI	METSEEM4236A12	Up to 5000 A (3 coils supplied)	Rogowski	12" (304.8 mm)	Yes	6 ft (1828.8 mm)	Yes
ANSI	METSEEM4236A18	Up to 5000 A (3 coils supplied)	Rogowski	18" (457.2 mm)	Yes	6 ft (1828.8 mm)	Yes
ANSI	METSEEM4236B101	100 A (3 CTs supplied)	Split core		Yes	6 ft (1828.8 mm)	Yes
ANSI	METSEEM4236B201	200 A (3 CTs supplied)	Split core		Yes	6 ft (1828.8 mm)	Yes
ANSI	METSEEM4236B401	400 A (3 CTs supplied)	Split core		Yes	6 ft (1828.8 mm)	Yes

EM4200 series

EM4200 dimensions

